

## CLAIMS:

1. Digital amplifier for converting an input signal to a power output, comprising: a bridge circuit with at least one pair of switches; and a supply ripple pre-compensation circuit for compensating voltage ripples on a supply voltage supplied to the bridge circuit; wherein the supply ripple pre-compensation circuit compensates the voltage ripples on the supply voltage based on the input signal.  
5
2. The digital amplifier according to claim 1, wherein the input signal is an audio signal; wherein the audio signal is filtered by means of a filter; and wherein the filtered audio signal and thus only a part of a frequency content of the audio signal is fed forward for pre-compensating ripples on the supply voltage.  
10
3. The digital amplifier according to claim 1, wherein the supply ripple pre-compensation circuit is one of a digital controller and an analogue control circuit; and wherein the digital amplifier is a class D amplifier.  
15
4. Digital amplifier system for converting a plurality of input signals to a plurality of power outputs, comprising: a plurality of bridge circuits, each bridge circuit including at least one pair of switches; and a supply ripple pre-compensation circuit for compensating voltage ripples on a supply voltage supplied to the plurality of bridge circuits; wherein the supply ripple pre-compensation circuit compensates the voltage ripples on the supply voltage based on at least one input signal of the plurality of input signals.  
20
5. The digital amplifier system according to claim 4, further comprising a  
25

combination circuit; wherein the plurality of input signals are channels of an audio signal; wherein the combination circuit combines the plurality of input signals to one signal which is applied to the supply ripple pre-compensation circuit.

- 5 6. The digital amplifier system according to claim 5, wherein the combination circuit comprises: a squaring circuit and an adder; wherein the plurality of input signals are individually squared by means of the squaring circuit and then added by means of the adder for combining the plurality of input signals to the one signal which is applied to the supply ripple pre-compensation circuit.

10

7. Compensation circuit for connection between a power supply and a class D amplifier, wherein the class D amplifier converts an input signal to a power output and wherein the class D amplifier includes at least one pair of switches, the compensation circuit comprising: a supply ripple pre-compensation circuit for  
15 compensating voltage ripples on a supply voltage provided by the power supply and supplied to the at least one pair of switches; wherein the supply ripple pre-compensation circuit compensates the voltage ripples on the supply voltage based on the input signal.

- 20 8. The compensation circuit according to claim 7, wherein the input signal is an audio signal; wherein the audio signal is filtered by means of a filter; wherein the filtered audio signal and thus only a part of a frequency content of the audio signal is fed forward for pre-compensating ripples on the supply voltage; and wherein the supply ripple pre-compensation circuit is one of a digital controller and an  
25 analogue control circuit.

9. Method of operating a class D amplifier which converts an input signal to a power output, the class D amplifier including a bridge circuit, the method comprising the steps of: pre-compensating voltage ripples on a supply voltage  
30 supplied to the bridge circuit on the basis of the input signal.

10. The method according to claim 9, wherein the input signal is filtered by means of a filter; and wherein the filtered input signal and thus only a part of a frequency content of the input signal is fed forward for pre-compensating ripples on the supply voltage.
- 5
11. The method of claim 9, further comprising the steps of: individually squaring a plurality of channels of an audio signal; adding the individually squared channels of the audio signal to form the input signal; supplying a plurality of bridge circuits of a plurality of digital amplifiers corresponding to the plurality of different channels with the pre-compensated supply voltage to thereby perform the pre-compensation of voltage ripples on the supply voltage of the plurality of bridge circuits of the plurality of digital amplifiers.
- 10
12. The method of claim 9, further comprising the steps of: squaring a subwoofer channel audio signal; using the squared subwoofer channel audio signal as input signal for the pre-compensation; supplying a plurality of bridge circuits of a plurality of digital amplifiers corresponding to the plurality of different channels with the pre-compensated supply voltage to thereby perform the pre-compensation of voltage ripples on the supply voltage of the plurality of bridge circuits of the plurality of digital amplifiers.
- 15
- 20